

Aquarius Reef Base The Cleaning Station



Cleaning Station – a juvenile hogfish cleans a black grouper Jacqui Stanley 2010

Activity Summary

In this lesson, students will create their interpretation of a cleaning station. This is usually a prominent place on the reef, like a large coral colony where special fish or shrimp, known as cleaners, live. Cleaners make their living by picking parasites and dead skin off fish. Scientists think that the cleaner fish have certain colors and body patterns to distinguish them as cleaners. This lesson suggests using collage to create the artistic interpretation, however a painting or a crayon drawing will work well.

Grade Level: 3 – 6

Time Frame: One class period

Materials:

Painting:

- Paper suitable for painting or crayons
- Poster paints and brushes
- Crayons/pencils

Collage:

Pictures of fish and coral reefs from magazines
Construction paper and glue
Found objects such as pieces of fabric, buttons, hair ribbon
Color Wheel
Samples of yellow and purple/ green and red construction paper to illustrate contrast

Learning Objectives:

Art:

Students will be able to:

- Create artworks, using a variety of colors, forms and lines
- Identify colors, textures, forms, and subjects in the environment
- Identify connections between the visual arts and other disciplines in the curriculum

Science:

Students will be able to:

- Communicate observations and provide reasons for explanations
- Use form to explain function
- Use function to explain form

Vocabulary

ART:

BALANCE - a design principle concerned with the arrangement of one or more elements in a work of art so that they appear symmetrical (even) or asymmetrical (uneven) in design and proportion

PATTERN - Artists create pattern by repeating a line, shape or color over and over again. Sometimes a regular repetitive pattern will suggest movement.

CONTRAST – contrast colors are the opposite colors on the color wheel. The greater the difference in colors, the more attention they attract. Contrast cannot happen without the opposite color or line being present.

COLLAGE – is a piece of art made by pasting paper or objects or text on to cardboard or paper. The objects can be whatever you wish, for example tissue paper, wrapping paper, newspaper pages, magazine pages, cardboard, foil, metal, plastic, fabric, wire, photographs, found objects such as feathers, or stones, and broken toys or appliances or cut up paintings that haven't worked, or paintings deliberately created to be collage

elements.

SCIENCE:

CLEANING STATIONS – these are areas on the coral reef where marine animals come to be cleaned free from parasites or to have dead skin removed from around a wound.

PARASITES – are small animals that live on or inside larger animals and often cause irritation and illness.

JUVENILE - a young fish – not yet an adult

Preparation

Images of fish being cleaned.

Pictures of a coral reef

Projected image of Cleaning Station painting – see start of lesson plan

Web sites showing pictures of fish and eels and turtles being cleaned.

Color Wheel

Procedure

- 1) Look at the image at the beginning of the lesson. The small cleaner fish is actually a juvenile hogfish and it is cleaning another type of fish: a black grouper.
- 2) Discuss the role of the cleaner fish. It removes parasites that can irritate a fish as well as remove dead skin from the body of the fish. Mention that other animals aside from groupers are cleaned. For example: Turtles, moray eels, sharks, Manta rays, and many more marine animals need cleaning.
- 3) Choose the media for the art creation. If students are creating a collage they need to decide on a background. It does not have to be a blue sheet of paper. They can create torn strips of paper to suggest waves or they may have found objects such as strips of hair ribbon or other media or even pieces of text that has relevance to their art work.
- 4) As this project has a definite subject, students should think about how best to highlight the subject.
- 5) Show the color wheel and compare the pieces of construction paper to illustrate how colors that are opposite on the color wheel give the greatest

- contrast – example purple and yellow. Look around the classroom and discuss examples of contrast. Note that the cleaner fish is colored yellow and purple.
- 6) Discuss balance. Decide where to place the subjects for the best understanding. The students may decide to create a coral reef with layers of construction paper and place the cleaning station next to or above the coral reef.
 - 7) Show examples of cleaner fish and discuss the research that suggests the cleaner fish are distinguished by a distinctive color pattern.
 - 8) The cleaner fish that is frequently seen in the waters of Florida are Spanish hogfish. They are purple and yellow in color! They have great contrast to show other fish they are cleaners.
 - 9) Some shrimp also are cleaners and have stations. “Finding Nemo” showed Jacques, the cleaner shrimp cleaning all the fish in the tank!
 - 10) Create a cleaning station that will attract attention and will show the animals being cleaned. They open their mouths and allow the cleaner fish into their gills. Some animals like being cleaned so much, they change color.

Education Standards

National Education Standards	<p>ART : NA-VA.K-4.1 UNDERSTANDING AND APPLYING MEDIA, TECHNIQUES, AND PROCESSES</p> <p>NA-VA.K-4.2 USING KNOWLEDGE OF STRUCTURES AND FUNCTIONS</p> <p>SCIENCE: E.U.5 Form and function</p> <p>a. Form–Form is the shape of an object. The goal is for students to use form to explain function.</p> <p>b. Function–Function is the normal or characteristic action of anything. The goal is for students to use function to explain form.</p> <p>ENGLISH/LANGUAGE ARTS NCTE/IRA Standards</p> <p>3) Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.</p> <p>11) Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy communities.</p>
Ocean Literacy Principles	<p>The Ocean supports a great diversity of life and ecosystems</p>

Evaluation

Students create their version of a cleaning station and clearly show that they understand what this is by using contrast and color.

Extension

In groups, students create a cleaning station using a variety of cleaners such as fish and shrimp, and also a variety of marine animals that are waiting to be cleaned.

Resources

https://marinelife.noaa.gov/media_lib/preview.aspx?ID=7189&p=img

This image clearly shows a tiger grouper being cleaned. The grouper has its mouth open wide to facilitate the cleaning.

<http://www.flmnh.ufl.edu/fish/gallery/descript/nassaugrouper/nassaugrouper.html>

This site shows detailed information about the Grouper including a great photograph of the grouper being cleaned.

Acknowledgements:

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